



H1677  
0056897

31 January 2004 *2/2/02*

Joan Kessner  
Bechtel-Hanford, Inc.  
3190 Washington Way  
MSIN H9-03  
Richland, WA 99352

**RECEIVED**  
APR 16 2002

**EDMC**

**Subject: Contract No. 630**  
**Analytical Data Package**

Dear Ms. Kessner:

Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

LvLI Batch #	0201L 828 <i>sig 1/3/02</i>
SDG #	H1677
SAF #	B01-114
Date Received	1-23-02
# Samples	3
Matrix	Water
Volatiles	X
Semivolatiles	
Pest/PCB	
DRO/GRO	
GC Scan	
Metals	
Inorganics	

The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,  
Lionville Laboratory Incorporated

*Orlette S. Johnson*  
Orlette S. Johnson  
Project Manager



r:\group\pm\orlette\tnu-hanford\data\bc\_ltr.doc

Lionville Laboratory, Inc.  
VOA ANALYTICAL DATA PACKAGE FOR  
TNU-HANFORD B01-114 *H1677*



RFW LOT # : 02012328

CLIENT ID	RFW #	MTX	PREP #	COLLECTN	DATE REC	EXT/PREP	ANALYSIS
B13Y28	001	W	02LVG014	01/21/02	01/23/02	N/A	01/25/02
B13Y28	001 MS	W	02LVG014	01/21/02	01/23/02	N/A	01/25/02
B13Y28	001 MSD	W	02LVG014	01/21/02	01/23/02	N/A	01/25/02
B12XL8	002	W	02LVG013	01/21/02	01/23/02	N/A	01/24/02
B12XL8	002 D1	W	02LVG014	01/21/02	01/23/02	N/A	01/25/02
B12XL9	003	W	02LVG013	01/22/02	01/23/02	N/A	01/24/02
B12XL9	003 D1	W	02LVG014	01/22/02	01/23/02	N/A	01/25/02

LAB QC:

VBLKIH	MB1	W	02LVG014	N/A	N/A	N/A	01/25/02
VBLKIH	MB1 BS	W	02LVG014	N/A	N/A	N/A	01/25/02
VBLKIG	MB1	W	02LVG013	N/A	N/A	N/A	01/24/02



Client: TNU-HANFORD B01-114  
LVL #: 0201L828  
SDG/SAF #: H1677/B01-114

W.O. #: 11343-606-001-9999-00  
Date Received: 01-23-2002

## GC/MS VOLATILE

Three (3) water samples were collected on 01-21,22-2002.

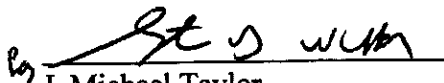
The samples and their associated QC samples were analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8260A for client specified Volatile target compounds on 01-24,25-2002.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LVL's sample acceptance policy.
2. The analysis holding time was met.
3. Non-target compounds were not detected in the samples.
4. Samples B12XL9 and B12XL8 required 2 and 50-fold dilution respectively due to high levels of target compounds.
5. One (1) of thirty (30) surrogate recoveries was outside EPA QC limits. The out of criteria sample B12XL8 was diluted, analyzed on 01-25-2002 and reported.
6. Two (2) of ten (10) matrix spike recoveries were outside EPA QC limits.  
One (1) of five (5) blank spike recoveries was outside EPA QC limits.

The percent recovery for 1,1-Dichloroethene was biased low; however, all other spike recoveries were within limits. There was no significant impact on the data. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

7. Internal standard area criteria were not met for the matrix spike duplicate. The analysis of associated matrix spike sample fulfills the reanalysis requirement of B12Y28 MSD.
8. "I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

  
J. Michael Taylor  
President  
Lionville Laboratory Incorporated

01-30-02  
Date

son\group\data\voa\tnu-hanford\0201-828.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 14 pages.

# Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 02010008

Initiator: DRYCHAK Batch: 01021823, 828 Parameter: 0624  
 Date: 1/28/02 Samples: BS, COI MS/MSD, COI MS/MSD Matrix: Water  
 Client: INU Method: SW846/MCAWW/CLPI Prep Batch:

## 1. Reason for SDR

a. COC Discrepancy ☐ Tech Profile Error ☐ Client Request ☐ Sampler Error on C-O-C  
☐ Transcription Error ☐ Wrong Test Code ☐ Other

## b. General Discrepancy

☐ Missing Sample/Extract ☐ Container Broken ☐ Wrong Sample Pulled ☐ Label ID's Illegible  
☐ Hold Time Exceeded ☐ Insufficient Sample ☐ Preservation Wrong ☐ Received Past Hold  
☐ Improper Bottle Type ☐ Not Amenable to Analysis

Note\*: Verified by [Log-In] or [Prep Group] (circle)...signature/date: TE 1/28/02

c. Problem (Include all relevant specific results; attach data if necessary) upon work up of data, noticed that 1. IDEE in BS had been manually integrated below the actual base line. Proceeded to integrate properly did in doing so the recovery was out to 60% (lower limit 61%). 1. IDEE was also out 100. the above mentioned MS/MSD SETS. Can we narrate? samples still in hold we could return MS/MSD'S?  
TE 1/28/02

## 2. Known or Probable Causes(s)

## 3. Discussion and Proposed Action

Other Description:

☐ Re-log  
☐ Entire Batch  
☐ Following Samples:   
☐ Re-leach  
☐ Re-extract  
☐ Re-digest  
☐ Revise EDD  
☐ Change Test Code to   
☐ Place On/Take Off Hold (circle)

report and narrate

## 4. Project Manager Instructions...signature/date:

☐ Concur with Proposed Action  
☐ Disagree with Proposed Action; See Instruction  
☒ Include in Case Narrative  
☐ Client Contacted:  
 Date/Person   
☐ Add  
☐ Cancel

## 5. Final Action...signature/date:

Other Explanation:

☒ Verified re-[log][leach][extract][digest][analysis] (circle)  
☒ Included in Case Narrative  
☐ Hard Copy COC Revised  
☐ Electronic COC Revised  
☐ EDD Corrections Completed

02011823 BKA 1/30/02  
02011828 PM 1/30/02

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

Route Distribution of Completed SDR  
Z ☒ X Initiator  
☐ ☒ X Lab General Manager: M. Taylor  
I ☒ X Project Mgr. Stone/Johnson/Heslett  
☐ ☒ X Technical Mgr. Wesson/Daniels  
☐ ☒ X QA (file): Alberts  
☐ ☐ Data Management: Feldman  
☐ ☐ Sample Prep: Beegle/Kiger

Route Distribution of Completed SDR  
☐ ☐ Metals: Beegle  
☐ ☐ Inorganic: Perrone  
☐ ☐ GC/LC: Kiger  
☐ ☐ MS: Rychlak/Layman  
☐ ☐ Log-in: Keppel  
☐ ☐ Admin: Soos  
☐ ☐ Other:

## GLOSSARY OF VOA DATA

### ABBREVIATIONS

<b>BS</b>	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
<b>BSD</b>	=	Indicates blank spike duplicate.
<b>MS</b>	=	Indicates matrix spike.
<b>MSD</b>	=	Indicates matrix spike duplicate.
<b>DL</b>	=	Suffix added to sample number to indicate that results are from a diluted analysis.
<b>NA</b>	=	Not Applicable.
<b>DF</b>	=	Dilution Factor.
<b>NR</b>	=	Not Required.
<b>SP, Z</b>	=	Indicates Spiked Compound.

## GLOSSARY OF VOA DATA

### DATA QUALIFIERS

- U** = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- J** = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D** = Identifies all compounds identified in an analysis at a secondary dilution factor.
- I** = Interference.
- NQ** = Result qualitatively confirmed but not able to quantify.
- N** = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- X** = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y** = Additional qualifiers used as required are explained in the case narrative.

## TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quan modifications:

- MP** - Missed Peak: manually added peak not found by automatic quan program.
- PA** - Peak Assignment: quan report was changed to reflect correct peak assignment.
- RI** - Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.
- SP** - Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB** - Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.
- PI** - Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.

## Report Date: 01/30/02 08:53

Client: **TNUHANFORD B01-114 H1677** Work Order: 11343606001 Page: 1a

\*= Outside of EPA CLP QC limits.

Cust ID: B13Y28 B13Y28 B13Y28 B12XL8 B12XL8 B12XL9



RFW#: 001 001 MS 001 MSD 002 002 DL 003

Chlorobenzene	5 U	98 %	97 %	5 U	250 U	5 U
Ethylbenzene	5 U	5 U	5 U	5 U	250 U	5 U
Styrene	5 U	5 U	5 U	5 U	250 U	5 U
Xylene (total)	5 U	5 U	5 U	5 U	250 U	5 U
N-butylbenzene	5 U	5 U	5 U	5 U	250 U	5 U

\*= Outside of EPA CLP QC limits.

Report Date: 01/30/02 08:53 G

Client: **TNUHANFORD B01-114 H1677** Work Order: 11343606001 Page: 2a

	Toluene-d8	96 %	96 %	94 %	97 %
Surrogate	Bromofluorobenzene	106 %	110 %	107 %	115 %
Recovery	1,2-Dichloroethane-d4	101 %	99 %	104 %	97 %
<hr/>					
	f1	f1	f1	f1	f1
Chloromethane	20 U	10 U	10 U	10 U	10 U
Bromomethane	20 U	10 U	10 U	10 U	10 U
Vinyl Chloride	20 U	10 U	10 U	10 U	10 U
Chloroethane	20 U	10 U	10 U	10 U	10 U
Methylene Chloride	10 U	5 U	5 U	5 U	5 U
Acetone	34 JD	10 U	10 U	10 U	10 U
Carbon Disulfide	10 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	10 U	5 U	60 *	5 U	5 U
1,1-Dichloroethane	10 U	5 U	5 U	5 U	5 U
1,2-Dichloroethene (total)	10 U	5 U	5 U	5 U	5 U
Chloroform	270 D	5 U	5 U	5 U	5 U
1,2-Dichloroethane	10 U	5 U	5 U	5 U	5 U
2-Butanone	27 JD	10 U	10 U	10 U	10 U
1,1,1-Trichloroethane	10 U	5 U	5 U	5 U	5 U
Carbon Tetrachloride	330 D	5 U	5 U	5 U	5 U
Bromodichloromethane	10 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	10 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	10 U	5 U	5 U	5 U	5 U
Trichloroethene	10 U	5 U	90 %	5 U	5 U
Dibromochloromethane	10 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	10 U	5 U	5 U	5 U	5 U
Benzene	10 U	5 U	89 %	5 U	5 U
Trans-1,3-Dichloropropene	10 U	5 U	5 U	5 U	5 U
Bromoform	10 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone	20 U	10 U	10 U	10 U	10 U
2-Hexanone	20 U	10 U	10 U	10 U	10 U
Tetrachloroethene	10 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	10 U	5 U	5 U	5 U	5 U
Toluene	5 JD	5 U	97 %	5 U	5 U

\*= Outside of EPA CLP QC limits.

Cust ID: B12XL9 VBLKIH VBLKIH BS VBLKIG

RFW#: 003 DL 02LVG014-MB1 02LVG014-MB1 02LVG013-MB1

Chlorobenzene	10 U	5 U	96 %	5 U
Ethylbenzene	10 U	5 U	5 U	5 U
Styrene	10 U	5 U	5 U	5 U
Xylene (total)	10 U	5 U	5 U	5 U
N-butylbenzene	10 U	5 U	5 U	5 U

\*= Outside of EPA CLP QC limits.



<b>Bechtel Hanford Inc.</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				<b>B01-114-42</b>		Page 1 of 1		
<b>Collector</b> Renee Nielson		<b>Company Contact</b> Virginia Rohay		<b>Telephone No.</b> 372-9100		<b>Project Coordinator</b> TRENT, SJ		<b>Price Code</b> 7N <b>Data Turnaround</b>		
<b>Project Designation</b> PFP Well Installation Sampling and Analysis - Water		<b>Sampling Location</b> 200 West		<b>SAF No.</b> B01-114		<b>Air Quality</b> <input type="checkbox"/>		<b>45 Days</b>		
<b>Ice Chest No.</b> ERC-00-010		<b>Field Logbook No.</b> EL-1562		<b>COA</b> T20ZP1D722		<b>Method of Shipment</b> Federal Express				
<b>Shipped To</b> TMA/ECRA		<b>Offsite Property No.</b> A 020093				<b>Bill of Lading/Air Bill No.</b> 42357955-0475				
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>  Samples did not originate in radiological controlled area. No total activity associated with sample/samples. RT-1202  Special Handling and/or Storage			<b>Preservation</b>	HCl or H2SO4 to pH < 2 Cool						
			<b>Type of Container</b>	aGs*						
			<b>No. of Container(s)</b>	3						
			<b>Volume</b>	40mL						
<b>SAMPLE ANALYSIS</b>			VOA - E260A (TCL); VOA - E260A (Add-On) (n-Butylbenzene)							
<b>Sample No.</b>	<b>Matrix *</b>	<b>Sample Date</b>	<b>Sample Time</b>							
B13Y28	WATER	1-21-02	1700	X						
<b>CHAIN OF POSSESSION</b>				<b>SPECIAL INSTRUCTIONS</b>				<b>Matrix *</b>  S-Soil SB-Sediment SO-Solid S-Sludge W-Water O-Oil A-Air DS-Dry Solid DL-Dry Liquid T-Tissue WS-Wipe L-Liquid V-Vegetation X-Other		
Relinquished By: R. Nielson		Date/Time: 0505		Received By: Fredin		Date/Time: 1/22/02 0505				
Relinquished By: R. Nielson		Date/Time: 0900		Received By: R. Nielson		Date/Time: 0900				
Relinquished By: R. Nielson		Date/Time: 1-22-02		Received By: R. Nielson		Date/Time: 1-22-02				
Relinquished By: R. Nielson		Date/Time: 0900		Received By: R. Nielson		Date/Time: 0900				
Relinquished By: R. Nielson		Date/Time: 1-22-02		Received By: R. Nielson		Date/Time: 1-22-02				
Relinquished By: FEDEX		Date/Time: 1-23-02 1000		Received By: Calo Henry		Date/Time: 1-23-02 1000		Samples stored in Ref. # 2C at the 3728 Shipping Facility on 1/22/02 Collector not available to relinquish samples on 1/22/02 for shipment.  RT 1-22-02		
Relinquished By:		Date/Time:		Received By:		Date/Time:				
Relinquished By:		Date/Time:		Received By:		Date/Time:				
Relinquished By:		Date/Time:		Received By:		Date/Time:				
<b>LABORATORY SECTION</b>		Received By		Title				Date/Time		
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method		Disposed By				Date/Time		



<b>Bechtel Hanford Inc.</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				<b>B01-114-07</b>		<b>Page 1 of 1</b>		
<b>Collector</b> Renee Nielson		<b>Company Contact</b> Virginia Rohay		<b>Telephone No.</b> 372-9100		<b>Project Coordinator</b> TRENT, SJ		<b>Price Code</b> 7N <b>Data Turnaround</b>		
<b>Project Designation</b> PFF Well Installation Sampling and Analysis - Water		<b>Sampling Location</b> 200 West; Well Number C3803, Well Name 299-W15-42		<b>SAF No.</b> B01-114		<b>Air Quality</b> <input type="checkbox"/>		<b>45 Days</b>		
<b>Ice Chest No.</b> ERC-00-010		<b>Field Logbook No.</b> EL-1562		<b>COA</b> T20ZP1D722		<b>Method of Shipment</b> Federal Express				
<b>Shipped To</b> TMA/RECRA		<b>Offsite Property No.</b> A020093		<b>Bill of Lading/Air Bill No.</b> 42357955-0475						
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>			<b>Preservation</b>	R/NH <sub>4</sub> Cl or H <sub>2</sub> SO <sub>4</sub> to pH < 2 Cool						
			<b>Type of Container</b>	sGs*						
			<b>No. of Container(s)</b>	3						
			<b>Volume</b>	40mL						
<b>SAMPLE ANALYSIS</b>			VOA - 8260A (TCL); VOA - 8260A (Add-On) (n-Butylbenzene) Special Handling and/or Storage							
<b>Sample No.</b>	<b>Matrix *</b>	<b>Sample Date</b>	<b>Sample Time</b>							
B12XL9	WATER	1/22/02	0258	X						
<b>CHAIN OF POSSESSION</b>				<b>SPECIAL INSTRUCTIONS</b>						
Relinquished By <i>R. Nielson</i> Date/Time <i>1/22/02</i>		Received By <i>RT</i> Date/Time <i>0625</i>		USE B12XL3 for shipping  Samples stored in Ref. # 2C at the 3728 Shipping Facility on L20Z Collector not available to relinquish samples on L20Z for shipment.  RT 1-22-02						
Relinquished By <i>REMOVED FROM</i> Date/Time <i>0900</i>		Received By <i>RT</i> Date/Time <i>0900</i>								
Relinquished By <i>RT</i> Date/Time <i>0900</i>		Received By <i>FEDEX</i> Date/Time <i>1-23-02</i>								
Relinquished By <i>FEDEX</i> Date/Time <i>1-23-02 1000</i>		Received By <i>Calo</i> Date/Time <i>1-23-02 1000</i>								
Relinquished By <i>FEDEX</i> Date/Time <i>1-23-02 1000</i>		Received By <i>Calo</i> Date/Time <i>1-23-02 1000</i>								
Relinquished By <i>FEDEX</i> Date/Time <i>1-23-02 1000</i>		Received By <i>Calo</i> Date/Time <i>1-23-02 1000</i>		<b>Matrix *</b> S-Solid SO-Solid S-Solid W-Water O-Oil A-Air DL-Dissolved Solids DL-Dissolved Liquids T-Tissue W-Wipe L-Liquid V-Vegetation X-Other						
<b>LABORATORY SECTION</b>		<b>Received By</b> _____ <b>Title</b> _____ <b>Date/Time</b> _____								
<b>FINAL SAMPLE DISPOSITION</b>		<b>Disposed By</b> _____ <b>Date/Time</b> _____								

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